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EXAMINER	
NGO, KIET TUAN	

ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,164	CHEN ET AL.	
	Examiner	Art Unit	
	Kiet T. Ngo	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/18/2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07/18/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 16 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Vaitzblit et al (hereafter Vaitzblit) (U.S. Patent #5,528,513).

4. As to claims 1 and 16, Vaitzblit teaches the invention as claimed including an integrated circuit structure [20, 50, 52, 53, 54, Figure 1] for selecting a scheduling scheme according to which data is processed by a shared network resource [45, 60, Figure 1], wherein data is supplied from a plurality of network users [25, 30, Figure 1], said integrated circuit structure comprising:

a circuit module capable of implementing a plurality of scheduling schemes [Abstract lines 4-5; col. 3, lines 27-31]

a selector for selecting at least one of the pluralities of scheduling schemes, wherein the network resource processes data according to one or more selected scheduling schemes [Abstract lines 8-13, col. 4, lines 62-67; col. 5, lines 15-17].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-3, 6, 8, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaitzblit (U.S. Patent #5,528,513), as applied to claims 1 and 16 above.

7. As to claim 2, Vaitzblit doesn't specifically teach that the class is assigned to each user. However, Vaitzblit teaches assigning classes to a task and servicing data from each class in accordance with the selected scheduling scheme [Abstract lines 2-3, 9-13].

8. It would have been obvious to one of ordinary skill in the art at the time of the intention was made to have included assigning class to user in a system because doing so would give the network users a priority within each service class thus accurately allowing network resources to be allocated to correct network user.

9. As to claim 3, Vaitzblit as modified teaches the invention substantially as claimed including:

an integrated circuit structure wherein each user within a service class is assigned a priority within the service class, and wherein the selector causes the network resource to service data from each user in accordance with the priority of the user within the service class [col. 4, lines 31-34].

10. As to claim 6, Vaitzblit as modified teaches an integrated circuit wherein the data is in the form of data packets [col. 3, lines 11-15].

11. As to claim 8, Vaitzblit teaches the invention an integrated circuit structure wherein the selector is operable for selecting one or more of the plurality of scheduling schemes in accordance with a type of data presented by a plurality of classes [col. 4, lines 63-67; col. 8, lines 3 - 29].

12. As to claim 15, Vaitzblit teaches a shared network resource [40, Fig. 1] receiving data from a plurality of subscriber classes each class comprising a plurality of subscribers [25, 30, Fig. 1], a method for implementing a user-selectable scheduling scheme, from among a plurality of available scheduling schemes [col. 3, lines 27 – 30], for controlling processing of data received from the plurality of subscriber classes by the network resource, comprising:

determining the user-selected scheduling scheme [col. 3, lines 61 – 67; col. 4, lines 1 – 5; col. 7, lines 61 - 64];

if a first scheduling scheme is selected, processing data received from subscribers of the plurality of subscriber classes according to a predetermined priority order for each subscriber class of the plurality of subscriber classes [col. 4, lines 22 – 25, lines 62 - 64]; and

if a second subscriber scheme is selected, first processing data received from subscribers of the plurality of subscriber classes within at least the highest priority subscriber class [col. 4, lines 30 – 33], then processing data received from subscribers within the remaining subscriber classes according to a round robin scheduling scheme [col. 4, lines 63 – 67].

13. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaitzblit (U.S. Patent #5,528,513), in view of Courtright et al (hereafter Courtright) (U.S. Patent #6157,963).

14. As to claim 4, Vaitzblit doesn't specifically detail having multiple queues for one user. However, Courtright discloses multiple memory queues for one user [col. 9, lines 12-16].

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Vaitzblit and Courtright, Courtright's multiple queues would increase the flexibility of Vaitzbliz's System by

allowing for different queues for different types of user data or multiple queues for one user who may have large amounts of data.

16. As to claim 7, Courtright teaches that the selector can be manually operable for selecting one or more of the scheduling schemes [col. 8, lines 31-42].

17. Claims 9 – 11, 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaitzblit (U.S. Patent #5,528,513) in view of Courtright (U.S. Patent #6,157,963) and in view of Calamvokis (U.S. Patent #5,572,522).

18. As to claim 9, Vaitzblit teaches a apparatus for selecting data from a plurality of network users for service by a shared network resource [col. 3, lines 17 – 20], wherein the data from each one of the plurality of network users is assigned to a priority class [col. 3, lines 29 – 30], and wherein a scheduling scheme for selecting the data for servicing by the network resource is selectable from among a plurality of scheduling schemes [col. 3, lines 27 – 28], said apparatus comprising:

a controller [53, Fig. 1] for supplying a signal indicating one or more selected scheduling schemes (i.e. rate monotonic or weighted round robin) from among the plurality of scheduling schemes [col. 7, lines 67; col. 9, lines 61 – 67; col. 8, lines 1 – 15; lines 17 – 19].

19. The combined teachings of Vaitzblit and Courtright do not teach a plurality of scheduling blocks each processing data from a respective priority class and each providing an eligible queue output signal in response to data from the respective priority class awaiting service, which used by a class selector in respect to the scheduling scheme determines the data to be serviced. However, the teachings of Calamvokis [col. 2, lines 65-67; col. 3 lines 1-15 Figure 2] show queue output signals that when sent through the proper de-multiplexer will then provide an appropriate address for the corresponding cell of data in memory to be serviced.

20. It would have been obvious to one of ordinary skill in the art at the time of the invention was made, to combine the teachings of Vaitzblit, Courtright, and Calamvokis' because when fed to the class selector would allow the class selector to determine which queue would be valid for servicing by a network resource.

21. As claim 10, Vaitzblit teaches the diagram of a C.P.U. [50, Figure 1] and memory [52, Figure 1] along with his scheduler [53, Figure 1] residing on a video file server [20, Figure 1].

22. As to claim 11, Vaitzblit teaches the first and the second queue, and wherein the selected scheduling scheme determines whether said first queue and both said first and said second queues are processed by each one of the plurality of scheduling blocks. Vaitzblit [col. 8, lines 3-29]

23. As to claim 13, Vaitzblit doesn't teach a smooth weighted round-robin scheduling scheme but rather states that a weighted round-robin scheduling scheme can be used [col. 4, lines 65-67]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include smooth weighted round-robin scheduling schemes because it would add different type of round-robin scheduling schemes in Vaitzblit's system.

24. As to claim 14, Vaitzblit teaches a rate monotonic and a weighted round-robin scheduling scheme but fails to teach strict priority, bandwidth limited strict priority, and strict priority plus smooth deficit weighted round robin. However, Courtright discloses that any combination of scheduling schemes can be implemented on his scheduler [col. 8, lines 44-46].

25. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaitzblit (U.S. Patent #5,528,513) in view of Courtright (U.S. Patent #6,157,963), and further in view of Joffe (U.S. Patent #6,014,367)

26. As to claims 5 and 12, Vaitzblit teaches one user/one memory queue association where each user is allocated only one memory queue and Courtright teaches of multiple memory queues per user but both fails to specifically mention a waiting and active

queue for each user. However, Joffe teaches the active queue and another waiting queue, [Figure 3A-3D; Figure 12], as well as details the advantages of these queues.

27. It would have been obvious to one of ordinary skill in the art at the time of the invention was made, to combine the teachings of Vaitzblit, Courtright, and Joffe, because Joffe's different queues would improve by the advantages of network resource scheduling, by placing data into incoming and outgoing queues as data arrived.

Response to Arguments

28. Applicant's arguments filed on 07/18/2005 have been fully considered but they are not persuasive.

29. Applicant argued in substance that,

(1) There is no disclosure, suggestion or inference in Vaitzbit of, "a circuit module capable of implementing a plurality of scheduling schemes and a selector for selecting one or more of the plurality of scheduling schemes", or "a scheduler for selecting one of the plurality of scheduling schemes."

(2) None of the art cited against independent claim 9 discloses, suggests, or motivates, "a controller for supplying a signal indicating one or more selected

scheduling schemes..., a plurality of scheduling blocks ... and a class selector.... as set forth in amended independent claim 9.

(3) There is motivation as to combine the Vaitzblit, Courtright, and Calamvokis references to disclose the Applicant's invention.

(4) In particular, the Examiner's reliance on a "class selector" in combination is misplaced such as a class selector is not present in all of the three references.

(5) In particular, there is no disclosure, suggestion, or motivation in Vaitzblit related to the Applicant's three steps set forth in amended claim 15, including, "determining the user's selected scheduling scheme," and processing the data received from subscribers according to either a first selected scheduling scheme or a second selected scheduling scheme.

30. Examiner respectfully disagrees with appliant's remarks;

31. As to point 1, Vaitzblit clearly teaches that the scheduler [53] is capable of implementing multiple scheduling schemes [col. 3, lines 27 – 33], (i.e. weighted round robin and rate monotonic), and a selector for choosing which of the plurality of scheduling schemes, either weighted round robin or rate monotonic [col. 4, lines 63 – 67].

32. As to point 2, see paragraphs 17 – 19 above. Vaitzblit teaches a controller [53, Fig. 1] for supplying a signal indicating one or more selected scheduling schemes (i.e. rate monotonic or weighted round robin) from among the plurality of scheduling schemes [col. 7, lines 67; col. 9, lines 61 – 67; col. 8, lines 1 – 15; lines 17 – 19]. Calamvokis teaches a plurality of scheduling blocks that provide a queue output signal [col. 2, lines 65-67; col. 3 lines 1-15 Figure 2].

33. As to point 3, see paragraph 20 above. Vaitzblit's scheduler implements multiple scheduling schemes. That in combination with Courtrights' multiple memory queues would allow for different queues for user's data. When Vaitzblit and Courtrights' inventions are combined with the queue output signals of Calamvokis this allows Courtright's queues the ability to notify Vaitzblit's scheduler as to whether or not those queues need network servicing.

34. As to point 4, Courtright's assignment of classes as well as his dividing into multiple queues is similar to Vaitzblit's system of queuing different tasks based on priority and assigned weight. This would have allowed the scheduler to act as a class selector when deciding which class to service even though a class selector is not specifically stated or detailed in the three references.

35. As to point 5, see paragraph 12 above. Vaitzblit teaches the three-step process of determining the user selected scheduling scheme [col. 3, lines 61 – 67; col. 4, lines 1 – 5; col. 7, lines 61 - 64], processing the data received according to either a first selected scheduling scheme (i.e. rate monotonic) classes [col. 4, lines 22 – 25, lines 62 - 64] or a second selected scheduling scheme (i.e. weighted round robin) [col. 4, lines 63 – 67].

Conclusion

36. **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiet T. Ngo whose telephone number is (571)272-6451. The examiner can normally be reached on Mon. - Fri. 830-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-An Ai can be reached on (571)272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KTN

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